

AMENDMENTS TO THE SPECIFICATION:

Please substitute the following amended paragraph for the pending paragraph beginning on page 1, line 1:

This is a continuation-in-part of a commonly owned ~~pending-allowed~~ ~~Application No. 10/151,121 filed May 17, 2002~~ U.S. Patent 6,735,399 B2, by Charles H. Tabb, Scott M. Silence, Jane M. Kanehl, and Douglas A. Kreckel, and entitled "POST-LAUNCH PROCESS OPTIMIZATION OF REPLACEABLE SUB-ASSEMBLY UTILIZATION THROUGH CUSTOMER REPLACEABLE UNIT MEMORY PROGRAMMING". As to those claims in this CIP application that may not be entitled to said filing date of said parent application, and have a different inventorship, and thus may be subjected to a §102(e)/103 rejection upon publication or issuance of the parent application making it a reference, the MPEP §706.02(l)(2)(ii) approved statement for the 35 USC §103(c) removal of such a §102(e)/103 rejection is also hereby made. Namely, that this application and that reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, the same person.

Please replace paragraph [0003] with the following amended paragraph:

[0003] Many machines have replaceable sub-assemblies. Printing machines for example may have a number of replaceable sub-assemblies such as a fuser print cartridge, a toner cartridge, or an automatic document handler. These subassemblies may be arranged as a unit called a cartridge, and if intended for replacement by the customer or machine owner, may be referred to as a CRU. Examples of a CRU may include a printer cartridge, toner cartridge, ~~photo-receptor~~ photoreceptor, or transfer assembly unit. It may be desirable for a CRU design to vary over the course of time due to manufacturing changes or to solve post launch problems with either: the machine, the CRU, or a CRU and machine interaction.

Further, design optimizations may be recognized subsequent to design launch and machine sale, that a relatively simple code update or coefficient value change might realize. However, solving these problems, or providing optimization updates, generally requires a field call.

Please replace paragraph [0012] with the following amended paragraph:

[0012] In particular, the present invention relates to a method for operating a printer apparatus comprising the step of providing a customer replaceable unit separable from the printer apparatus, the customer replaceable unit further comprising a memory, the memory having stored ~~within~~ within a look up table of updated coefficient values relating to the utilization of the customer replaceable unit responsive to a design variance in the customer replaceable unit.

Please replace paragraph [0020] with the following amended paragraph:

[0020] Figure 1 shows a laser printer or machine 100 employing a replaceable sub-assembly in the form of a xerographic cassette or print cartridge 1 which is shown in greater detail in Figures 2 and 3. A xerographic imaging member in the form of an endless flexible photoreceptor belt is housed ~~within the CRU~~ the CRU or print cartridge 1, together with other xerographic process means as described below. A raster output scanner (ROS) 2 provides an imaging beam 3 which is directed at the photoreceptor belt through an imaging slit in the CRU 1 to form an electrostatic latent image on the photoreceptor belt. The image is developed within the ~~cassette~~ CRU 1 and is transferred, at a transfer station 4, to a copy sheet which is fed to that location from one of four supply trays 5, 6, 7 and 8. The transferred image is fused to the copy sheet at a fusing station 9 and the copy sheet may then be delivered from the machine 100 to be collected either in a sample tray 10 on top of the machine 100 or in a stacking tray 11 on the side of the machine

100. Alternatively, a copy sheet with a fused image on one side only may be put into a tray-less duplex path within the machine 100, to be returned to the transfer station 4 to receive an image on the other side before being delivered from the machine 100 into one of the trays 10, 11.

Please replace paragraph [0023] with the following amended paragraph:

[0023] The CRU 1, as already mentioned, is removable from the machine 100 and can be replaced by another CRU 1 if any of the process elements located therein begin to deteriorate. The CRU 1 has a memory chip or memory 30, as shown in Figure 3, in the form of an EEPROM (Electrically Erasable Programmable Read Only Memory) mounted in the top cover of the CRU 1. Contact pads 31 are provided on the memory chip 30 so that, when the ~~print cartridge~~ CRU 1 is inserted into the machine 100, the memory chip 30 is automatically connected to the machine control unit/CPU via a terminal block 32 on a part 33 of the machine 100. When inserted in the machine 100, the ~~memory 30~~ memory chip 30 receives information from the machine control unit/CPU. The ~~memory 30~~ memory chip 30 is preferably of a non-volatile type of memory such as the EEPROM discussed above. It will be well understood that there are many different ways to effect non-volatile memory and all those ways are within the scope of the present invention. For example, conventional RAM (Random Access Memory) is typically volatile and will lose the data contents of its cells when power is removed. However, if RAM is provided with a long life battery on ~~the CRU~~ the CRU 1 and if the RAM is of sufficiently low power dissipation, the combination may for all practical purposes effect a non-volatile memory as far as the useful life of ~~the CRU~~ the CRU 1 is concerned.

Please replace paragraph [0025] with the following amended paragraph:

[0025] The CPU 41 may also be provided with code which continually polls for the swapping of a CRU 1. In an alternative obvious to one skilled in the art, the CPU 41 may respond instead to an interrupt from the swapping of a CRU 1. In either case upon determination of a swapped or new CRU 1, the CPU 41 shall poll the CRU 1 and its memory chip ~~or CRUM~~ or CRUM 30 for indication that there are software updates of executable instructions or new setpoints to invoke.

Please replace paragraph [0035] with the following amended paragraph:

[0035] While the number of cycles are counted by the ~~machine~~ machine 100 and the calculation is performed by the ~~machine-processor CPU 41~~, the coefficients unique to the particular characteristics of the ~~photoreceptor drum~~ photoreceptor belt 20 in combination with the materials used are now stored in ~~the CRUM~~ the CRUM 30, instead of machine memory 42. In the past, storage of these coefficient values would be placed in machine memory 42. Then however, changes to the photoreceptor drum to improve performance that effect these coefficients would require a field engineer to visit the site and update machine memory 42. This would mean that issuing of an improved CRU design would require delicate timing to insure the units are installed subsequent to the coefficient values stored machine memory 42 being updated. Updating the machines in the field with machine upgrades or machine memory 42 updates is costly and time consuming. By storing the values of these coefficients in a LUT residing in ~~the CRUM~~ the CRUM 30 it is possible to avoid these costs and simplify the process. While the example provided above is a simple one, as the LUT in some machines is much more extensive and complicated, the same concepts will never-the-less still apply.